Taraxacum decastroi and T. lacianense (Asteraceae), two new species from the Iberian Peninsula

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Two new species of Taraxacum are described and illustrated. Taraxacum decastroi A. Galán & Vicente Orell., sp. nova was found in the Spanish Pyrenees, while T. lacianense A. Galán & Vicente Orell., was collected in the Cantabrian Mountains.

Key words: angiosperms, biodiversity, morphology, new species, taxonomy

Studies of the genus Taraxacum (Asteraceae) are still scarce for the Pyrenees (De Langhe & Van Soest 1972, Sahlin 1981, 1984a, 1984b) and the Cantabrian Mountains, in northern Spain (Van Soest 1954, Galán de Mera & Vicente Orellana 2009). In the scope of the revision of Taraxacum for the Flora iberica project (Castroviejo 1986–2009), some new species have been found in these mountain ranges. Two of them are similar to T. reophilum (Van Soest 1959), growing on humid soils near watercourses and in peat bogs. After the study of the type material of T. reophilum (Van Soest 31071: L 2648; Van Soest 31071a: L 2649; Van Soest 31067: L 2650), an alpine plant with long gracile leaves and dark involucres, and the material of our field work and various herbaria (ARAN, BC, BCN, BR, JACA, L, LEB, MA, MAF, SANT, USP, and W, as well as in Sánchez Pedraja’s private herbarium), we conclude the presence of two new species for the Spanish flora. They are apomictic, without pollen or with very few pollen grains, and with very located distributions, maybe due to climatic mountain conditions (Richards 2003).

Taraxacum decastroi A. Galán & Vicente Orell., sp. nova (Figs. 1 and 2)

Planta robusta ad 40 cm. Folia laete viridia late lanceolata; lobi laterales 5–7, lati, acuti, mucronati, deltoidei, interdum sine dentes; lobus terminalis subaequalis, triangularis ad hastatum; petiolus viridis, alatus. Scapi erecti, folia in anthesis superantes, viridi ad tenuiter purpureos. Calathium croceum, radians ca. 30 mm in diametro; squamae exteriores adpressae, atrovirides, leviter albomarginatae, ecallosae vel ecorniculatae, apice margineque interdum ciliolatae; liggae extus stria purpurea ornatae; antherae parce polliniferae, pollen valde irregulare; styli stigmaque croceos. Achenium olivaceum, nitidum, corpore squamuloso et apice spiculis numerosis, pyramid conica, rostro viridulo, pappo albo.

Robust plants, to 40 cm. Leaves 9–28.5 × 1.2–5 cm, spatulate to lanceolate, pinnatifid to pinnatipartite; midrib green, winged; lateral lobes 5–7, 9.1–25.5 × 8–25.6 mm, asymmetric, deltoid, mucronulate, with distal margin entire or toothed, straight to sigmoid, and proximal one entire, straight to concave; terminal lobe 17.1–32.8 × 16.7–29.1 mm, triangular to hastate and sometimes with margins lightly convex, mucronulate; petiole green, winged. Scapes green to lightly purple, erect, longer than leaves at flowering. Capitulum ca. 30 mm in diameter; involucre 12.7–19.7 × 4.1–7.5 mm; exterior phyllaries 4.7–6.7 × 1.6–3.4 mm, erect, ovate to ovate-lanceolate, dark green and sometimes ciliolate on margins and tip, neither horned nor corniculated, and with inconspicuous white borders; ligules ca. 12 mm long, saffron yellow, striped purple; pollen very scarce and with irregular size; stigma branches saffron yellow. Achenes olive-green, shining; body 2.8–3.2 mm long, with bitricuspidate scales and numerous small spikelets to tip; pyramid 0.4–0.7 mm long, conic; rostrum 8.1–8.7 mm long, whitish to olive-green and pappus 5.5–6.4 mm long, white.

Distribution. *Taraxacum decastroi* grows in the Spanish Pyrenees, between 1540–2340 m, in very humid soils in *Abies alba* forests, and flowers in the summer (June and July).
ETYMOLOGY. We have dedicated this species to our friend Dr. Emilio de Castro, a well-known Spanish naturalist.

**Taraxacum lacianense** A. Galán & Vicente Orell., *sp. nova* (Figs. 2 and 3)

Planta gracilis ad 60 cm. Folia laete viridia late lanceolata; lobi laterales 4–8, lati, acuminate, deltoidei, dentati; lobus terminalis subaequalis, triangularis ad hastatum; petiolum viridis, alatus. Scapi erecti, folia in anthesis superantes, viridi ad spadiceos, interdum nitidos purpureos. Calathium croceum, radians ca. 30 mm in diametro; squamae exteriores adpressae ad recurvatas, atrovirides, leviter albomarginatae, ecallosae vel ecorniculatae, apice et margine semper ciliolatae; ligulae extus stria purpurea ornatae; antherae vacuae; styli stigmataque croceos. Achenium stramineum vel olivaceum, corpore squamuloso apice ulla spiculis, pyramide conica, rostro stramineo vel olivaceo, pappo discolori.


Slender plants, to 60 cm. Leaves 4.3–30 × 1.2–5.4 cm, spathulate to lanceolate, pinnatifid to pinnatipartite; midrib green to brownish, winged; lateral lobes 4–8, 4.1–24.7 × 6.7–24.8 mm, asymmetric, triangular to deltoid, acuminate, with the distal margin toothed, straight to concave, and the proximal one entire, straight to concave; terminal lobes 11.2–39.8 × 12.6–44.4 mm, triangular to hastate sometimes with the margins lightly convex, acuminate to mucronulate; petiole green, winged. Scapes green to brownish, sometime lightly purple, erect longer than leaves at flowering. Capitulum ca. 30 mm in diameter; involucre 13.5–21.2 × 7.5–8.7 mm; exterior phyllaries 3.8–9.1 × 1.5–2.5 mm, erect to recurved, ovate-lanceolate, dark green, ciliolate on the margins and the tip, neither horny nor corniculated, and with an inconspicuous white border; ligules 8.6–14.7 mm long, saffron yellow, striped purple; anthers without pollen; stigma branches saffron yellow. Achenes straw-coloured to olive-green; body 3.8–4.6 mm long, with erose to tricuspidescales and some small spikelets to the tip; pyramidal 0.4–0.8 mm long, conic; rostrum 6.6–8.1 mm long, straw-coloured to olive-green; pappus 6.2–7.8 mm long, discoloured.

**Distribution.** *Taraxacum lacianense* is endemic to NW Spain (León Mountains). It grows in peat bogs on humid slate-rocks with accumulated soil, at 1500 m, in Betula alba forests. Its flowering takes place in June. It has been found in the Laciana region only (where it takes the specific name), in the León province of Spain.

**Discussion**

*Taraxacum decastroi* and *T. lacianense* are similar to *T. reophilum* from the Alps (Van Soest 1959). However, *T. reophilum* has polliniferous anthers, straw-coloured achenes with the body only with entire, erose or bicuspidate small scales, sometimes with some tubercle to the tip, rostrum 5–6 mm long, and white pappus. *Taraxacum lacianense* differs from *T. decastroi* by the leaves with lateral lobes triangular to deltoid, acuminate, straight to concave; anthers without pollen, achenes straw-colored to olive-green, body longer, and pappus discoloured. Characters of *T. reophilum*, *T. decastroi* and *T. lacianense* are presented in Table 1.

The assignment of the new species to sections within *Taraxacum* is problematic, because
Table 1. Principal differences between *Taraxacum reophilum*, *T. decastroi* and *T. lacianense*.

<table>
<thead>
<tr>
<th>Characters</th>
<th><em>T. reophilum</em></th>
<th><em>T. decastroi</em></th>
<th><em>T. lacianense</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant</td>
<td>graceful, to 30 cm</td>
<td>robust, to 40 cm</td>
<td>graceful, to 60 cm</td>
</tr>
<tr>
<td>Lateral lobes</td>
<td>acuminate</td>
<td>mucronate</td>
<td>acuminated</td>
</tr>
<tr>
<td>Terminal lobe</td>
<td>16–35.7 x 16.1–35.7 mm</td>
<td>17.1–32.8 x 16.7–29.1 mm</td>
<td>11.2–39.8 x 12.6–44.4 mm</td>
</tr>
<tr>
<td>Pollen</td>
<td>abundant, irregular size</td>
<td>scarce, irregular size</td>
<td>absent</td>
</tr>
<tr>
<td>Body of achenes</td>
<td>3.8–4.3 mm</td>
<td>2.8–3.2 mm</td>
<td>3.8–4.6 mm</td>
</tr>
<tr>
<td>Body ornaments</td>
<td>small scales or tubercles</td>
<td>with numerous spikelets</td>
<td>with few spikelets</td>
</tr>
<tr>
<td>Pyramid length</td>
<td>0.7–1.2 mm</td>
<td>0.4–0.7 mm</td>
<td>0.4–0.8 mm</td>
</tr>
<tr>
<td>Pappus length</td>
<td>5–6.5 mm</td>
<td>5.5–6.4 mm</td>
<td>6.2–7.8 mm</td>
</tr>
<tr>
<td>Colour pappus</td>
<td>white</td>
<td>white</td>
<td>discolour</td>
</tr>
<tr>
<td>Habitat</td>
<td>along brooks</td>
<td>along brooks</td>
<td>peat bogs on humid slate-rock</td>
</tr>
</tbody>
</table>

morphological limits between the sections are often imprecise (Matysiak 1994, Wittzell 1999). Our new species have certain resemblance to the sections *Fontana*, *Alpestris* and *Ruderalia*. Van Soest (1959), when describing *T. reophilum* indicated that it can be considered to lie between the *Vulgaria* (Ruderalia) and *Fontana* sections, and that it seems to be related to *T.*
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